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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/809,826	03/16/2001	Larry D. Smith	5181-71501	5952

7590

07/30/2003

B. Noel Kivlin
Conley, Rose & Tayon, P.C.
P.O. Box 398
Austin, TX 78767-0398

EXAMINER

DINH, TUAN T

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/809,826	SMITH ET AL.	
	Examiner	Art Unit	
	Tuan T Dinh	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9,11-15 and 17 is/are pending in the application.
- 4a) Of the above claim(s) 12 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9,11,13 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 10 March 2003 is: a) ☐ approved b) ☒ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Terminal Disclaimer

The terminal disclaimer filed on 03/10/03 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 03/16/01 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **cross-hatching** of the drawings must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The cross-hatching of an IC, a power laminate, and a PCB in figures 1-6 are improper because the cross-hatching of them seems to make by metal material.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 11 is objected to because of the following informalities:

Claim 11, line 1, please, change "...in claim 11" to --...in claim 1--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 4-9, 13, and 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feilchenfeld et al. (U. S. Patent 5,798,563, hereafter fed) in view of Smith et al. (U. S. Patent 5,694,297).

As to claims 1, 4, 13, 15, 17, Fed discloses a system for delivering power to an integrated circuit as shown in figures 1-2 comprising:

an integrated circuit (42, column 2, line 42);

a printed circuit board (substrate-46, column 2, line 28) including at least one signal layer (pad on board, not shown) for conveying signals to the integrated circuit; and

a power laminate (10, column 1, line 58) is arranged between the IC and the PCB (see figure 1) for providing core power to the IC, wherein the power laminate includes a plurality of plane pairs, wherein each of the plurality of plane pairs includes a power plane (18, column 1, line 63) and a reference plane (20, column 1, line 65), wherein the power laminate is separate from the PCB;

Fed discloses all of the limitations of the claimed invention, except for the power laminate includes a switching voltage regulator circuit and a plurality of decoupling capacitors mounted on the power laminate.

Smith shows a system as shown in figures 2-3 comprising a power laminate (108, column 5, line 6) having a switching voltage regulator circuit (116, column 5, line 14) and a plurality of decoupling capacitors (122) mounted on the power laminate.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a power laminate having a voltage regulator and decoupling capacitors as taught by Smith to employ the system of Fed in order to provide a DC-DC power voltage supply operates on an IC chip mounted on the power laminate and provide a minimize affect of parasitic inductance in IC chip.

As to claim 2, Fed discloses the system as shown in figures 1-2 wherein the PCB (10) does not provide core power to the integrated circuit (1).

As to claim 5, Fed discloses the system as shown in figures 1-2 wherein the power laminate (10) including an aperture (26, column 2, line 3) for allowing signal to pass from The PCB to the IC.

As to claims 6-9, Fed discloses the system as shown in figures 1-2 wherein the power laminate made of dielectric material (14, 16, column 1, lines 60-62), having ball grid arrays (44, 48, column 2, lines 25-29).

As to claim 11, Fed discloses the system as shown in figures 1-2 wherein each of the plurality of plane pairs is in an electrically parallel (see figure 1) configuration with respect to each of the other plane pairs of the plurality of plane pairs

Response to Arguments

5. Applicant's arguments with respect to claims 1-2, 4-9, 11, 13, 15, and 17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gedney et al. and Forehand et al. disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TD
July 15, 2003.

John B. Vigushin
John B. Vigushin
Examiner
AU 2827